

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for performing pressure measurements in a mammal by means of a pressure profile sensors technique, which comprises
  - a) introducing into the mammal a catheter lumen having at least a portion of its wall which is sufficiently flexible to be deflected by external pressure;
  - b) introducing progressively into the catheter lumen an electrically conductive liquid substance while applying simultaneously to it the electrically conductive liquid substance an alternative current and mechanical oscillations;
  - c) detecting by means of an electrode placed at an external surface of the mammal a leakage current induced by the liquid substance traveling through the catheter;
  - d) transferring the leakage current thus recorded to a converter suitable to convert the leakage current provided thereto into corresponding pressure values; and
  - e) displaying the pressure values as such, or as a function of a measurement location or measurement period or both, to afford corresponding pressure profiles.
2. (Previously Presented) The method of claim 1, wherein the alternative current is a low voltage and high frequency current and wherein the mechanical oscillations have controlled amplitude and frequency.
3. (Previously Presented) The method according to claim 1, wherein the catheter is made of innocuous polymer plastic material.
4. (Previously Presented) The method according to claim 1, wherein the catheter is a single lumen or a multi-lumen catheter.
5. (Previously Presented) The method according to claim 1, wherein the electrically conductive liquid substance is an aqueous liquid.

6. (Previously Presented) The method according to claim 1, wherein the electrically conductive liquid substance is progressing step-by-step through the catheter lumen.

7. (Previously Presented) The method according to claim 1, wherein the alternative current voltage applied to the electrically conductive liquid substance is between about 500 mV and about 6 V.

8. (Previously Presented) The method according to claim 1, wherein the alternative current frequency applied to the electrically conductive liquid substance is between about 60 and 130 kHz.

9. (Previously Presented) The method according to claim 1, wherein the mechanical oscillations applied to the electrically conductive liquid substance have a maximum amplitude of about 4 mm and a maximum frequency of about 15 Hz.

10. (Currently Amended) A method of performing real time pressure profile measurements or performing pressure measurements in mammal body tracts or cavities, or blood vessels using the method of claim 1 comprising:

a) introducing into the mammal a catheter lumen having at least a portion of its wall which is sufficiently flexible to be deflected by external pressure;

b) introducing progressively into the catheter lumen an electrically conductive liquid substance while applying simultaneously to the electrically conductive liquid substance an alternative current and mechanical oscillations;

c) detecting by means of an electrode placed at an external surface of the mammal a leakage current induced by the liquid substance traveling through the catheter;

d) transferring the leakage current thus recorded to a converter suitable to convert the leakage current provided thereto into corresponding pressure values; and

e) displaying the pressure values as such, or as a function of a measurement location or measurement period or both, to afford corresponding pressure profiles.

11. (Cancelled).

12. (Currently Amended) A method for performing ex-temporaneum pressure measurements using a method for performing pressure measurements in a mammal by means of a pressure profile sensors technique, comprising:

- a) introducing into the mammal a catheter lumen having at least a portion of its wall which is sufficiently flexible to be deflected by external pressure;
- b) introducing progressively into the catheter lumen an electrically conductive liquid substance while applying simultaneously to the electrically conductive liquid substance an alternative current and mechanical oscillations;
- c) detecting by means of an electrode placed at an external surface of the mammal a leakage current induced by the liquid substance traveling through the catheter;
- d) transferring the leakage current thus recorded to a converter suitable to convert the leakage current provided thereto into corresponding pressure values; and
- e) displaying the pressure values as such, or as a function of a measurement location or measurement period or both, to afford corresponding pressure profiles the method of claim 1 by and further comprising:

recording the pressure values provided by the converter and by displaying them at a time different from that of the leakage current recording thus recorded.

13. (Currently Amended) An apparatus for performing the method of claim 1 a method for performing pressure measurements in a mammal by means of a pressure profile sensors technique, comprising:

- a) introducing into the mammal a catheter lumen having at least a portion of its wall which is sufficiently flexible to be deflected by external pressure;
- b) introducing progressively into the catheter lumen an electrically conductive liquid substance while applying simultaneously to the electrically conductive liquid substance an alternative current and mechanical oscillations;
- c) detecting by means of an electrode placed at an external surface of the mammal a leakage current induced by the liquid substance traveling through the catheter;

d) transferring the leakage current thus recorded to a converter suitable to convert the leakage current provided thereto into corresponding pressure values; and

e) displaying the pressure values as such, or as a function of a measurement location or measurement period or both, to afford corresponding pressure profiles,

and which further comprises:

a source of an electrically conductive liquid substance connected to an alternative current source;

a peristaltic pumping means fitted directly to the source of liquid substance;

a mechanical oscillation means connected downwards to down stream from the peristaltic pumping means;

an electrode capable of being placed at the external surface of the mammal for recording and then transferring a detected leakage current to a converter;

a converter suitable for deriving pressure values from the leakage current parameters which have been transferred thereto; and

a means suitable to display pressure values as such, or as a function of the measurement location or measurement period or both.

14. (Previously Presented) Method according to claim 9, wherein the mechanical oscillations applied to the electrically conductive liquid substance have an amplitude of about 2 mm and a frequency of about 10 Hz .

15. (Previously Presented) The method according to claim 3, wherein the catheter is made of non-conductive innocuous polymer plastic material.

16. (Previously Presented) The method according to claim 5, wherein the electrically conductive liquid substance is a saline solution.

17. (Previously Presented) The method according to claim 7, wherein the alternative current voltage applied to the electrically conductive liquid substance is between about 1 and about 4 V.

18. (Previously Presented) The method according to claim 8, wherein the alternative current frequency applied to the electrically conductive liquid substance is between about 80 and 120 kHz.

19. (Currently Amended) The method according to claim 10, wherein the Performing pressure profile measurements in mammal body tracts or cavities comprising comprise a lung, esophagus, stomach, intestine, urinary tract or bladder, or blood vessels, using the method of claim 10.

20. (Currently Amended) The method according to claim 12 comprising Performing extemporaneum pressure profile measurements using the method of claim 12 by recording the pressure values provided by the converter and by displaying them at a time different from that of the leakage current recording thus recorded.